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ABSTRACT

This paper describes the development of an online public access catalog from a limited-purpose online circulation system at Ohio State University (OSU) and the negative and positive aspects of this transition. It is noted that the online system, known as the Library Control System (LCS), was designed to be fully operational in July 1982. Steps in LCS development from November 1970 to 1981 are presented in chronological order. Four problems with LCS are then discussed: (1) LCS is a full online catalog for only 20% of OSU titles; (2) the card catalog must still be used to obtain full records of pre-1974 and non-Roman alphabet materials; (3) LCS has design problems related to terminal operation, the use of complicated search keys, and the interpretation of different types of online displays, primarily because it was originally designed for staff use only; and (4) the gradual development of LCS and resulting system changes have necessitated much retraining of staff and library users. A brief discussion of LCS advantages follows, noting that LCS provides circulation status information for each title, remote access to the library catalog, the opportunity for economically feasible catalog change and expansion, and functions that speed technical service operations. Sample online records and searches are provided. (ESR)

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CIRCULATION SYSTEM TO ONLINE CATALOG:

THE TRANSITION AT OSU

BY

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FINAL DRAFT

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Bridging The Gap

District of Columbia Library Association

Technical Services Interest Group

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CIRCULATION SYSTEM TO ONLINE CATALOG:

THE TRANSITION AT OSU

INTRODUCTION

I have been asked to describe to you some of the problems OSU has experienced in turning a former circulation system into an online catalog. I also would like to share with you the positive aspects of this transition.

Time constraints allows only brief discussion of the negative and positive aspects of this action taken by the OSU Libraries. I hope you will take this opportunity to ask me questions about our automation activities. Let me confess, however, that I might not be able to answer all of them. Much of what I know about our Library Control System I have learned more or less by osmosis. I began working at OSU in 1970 as a cataloger, and, in that position, participated in the adoption of OCLC.

Since 1973, I have been a search services librarian at OSU's Mechanized Information Center (also organized in 1970). My official involvement with LCS began in 1977, through a committee charged with LCS training. Thus, my perspective is basically user-oriented.

If some of you do want more information about LCS, I have brought copies of an LCS bibliography, which you can pick up at the end of the program.

TRANSITION CHRONOLOGY

The OSU Libraries' transition to an online catalog did not happen quickly. Before discussing the trials and triumphs of this transition, let's look at a chronology of the changeover. (Table 1)

LCS began operation in November 1970. The database consisted of short records converted* from the shelflist. This included call number, main entry, short title, edition statement, date, LC card number (if any), a unique title

*736,000

number, and OSU locations. Circulation transactions were displayed as part of this short record, now called a Library Location Record. Here is an example of this record, which has remained basically unchanged since 1970. (Figure 1)

The system allowed searches by call number, title, or author-and-title, and, of course, handled the circulation functions: charge, discharge, renew, etc., plus overdue notices and fines. The search and circulation transactions were accomplished with the appropriate commands and search keys. Here is an example of a general search by author-and-title for the Carl Sagan book for which we just saw the short record. (Figure 2)

The Library Circulation System, as it was then called, was online and designed as such to allow decentralized or remote searching and circulation. (Table 1) Quick response--no more than a few seconds--was part of the design. The need for this kind of system is obvious when you look at the environment in which it operates. The OSU Libraries are comprised of one Main Library, 26 department libraries and two undergraduate libraries. The OSU Columbus campus is more than 3,000 acres in size and some libraries are miles apart. The collection contains 3.6 million volumes representing 1.6 million titles and expands at a rate of 130,000 volumes per year. The libraries serve a primary clientele of more than 70,000 students, faculty, and staff.

The LCS link permitted our patrons fast and easy access to the entire collection, no matter which library they went to first. The LCS Telephone Center extended this remote searching and circulation even further, so that a patron could call from anywhere--home, office, even long distance--and have a book charged to him, and held for pick-up or mailed to a campus address.

The system underwent only minor changes until 1974. In that year, the Shelf-Position Search was initiated. This feature allowed cataloging personnel to shelflist new books using LCS, usually in conjunction with use of an OCLC

terminal. Other than charging books out to the bindery, this was the first formal technical services use of LCS.

The transition to an online catalog really began in 1975, when our first public access terminal was made available. It was placed at the Catalog Information Desk in the Main Library, near our union card catalog. This was the beginning of some of the problems I'll talk about later. Also in that year, an author search was initiated, using full names, rather than a search key, as in the title or author/title searches.

The next major changes occurred in 1977. (Table 2) The author search went to a new command and a 4+5 search key, but, more importantly, the Serial Holdings File was made available. This file is an extension of our short records for serials, giving years and volumes owned for each title. This example shows a relatively simple record for a journal. (Figure 3)

The potential for an online catalog became more of a reality in June 1978, when LCS was enhanced to include storage of full MARC records, which we call Full Bibliographic Records. These records contain descriptive information only--no location or circulation information. Here is the Full Bibliographic Record for the same book we saw earlier. (Figure 4) With the addition of these records (for newly cataloged items), we received subject search capability (using LC headings), a new author search key (6+3 instead of 4+5), and the capability of searching added entries.

It was now possible, at least for newer titles, for LCS to do those things Margaret Mann says a catalog should do. (Table 2) By this time, the State Library of Ohio had converted their holdings (excluding serials) to machine-readable form and, having investigated commercial systems, chose to use LCS as their circulation system and catalog. By March 1979, all of their records had been added to LCS and, in December 1980, the State Library closed its catalog. LCS is now a shared, or union, catalog for the two libraries.

OSU, meanwhile, was moving even closer to an online catalog. In January 1981, with the implementation of AACR2, we chose to use LCS as the catalog for items which generated conflicts with AACR1 in the card catalog. A link is created for the patron to show that entries in the new form will be found in LCS.

We have been gradually adding Full Bibliographic Records, using OCLC-MARC archival tapes, and now have full catalog access for records back to January 1974.

By December of this year, the necessary programming will have been completed to allow for what OSU calls headings and cross reference control and display. (Table 3) That is, LCS will handle authority records for names, subjects, series and uniform titles. As part of this move, we are changing the subject search command (SUB instead of SIS), reverting back to full name searching for authors, and adding searches for series and uniform titles. There will be slightly different public and staff versions of the author, subject, series and uniform title searches, with the staff searches allowing access to control numbers the public doesn't need to see. In fact, we plan at this time not to instruct the public in the use of the series and uniform title searches. They will have access to these entries through the regular author or title searches.

By July of 1982, we will no longer add cards to the catalog and LCS will be the catalog for newly acquired materials.

TRIALS AND TRIUMPHS

As you can see from the chronology, LCS has undergone a great deal of change and expansion since 1970. Therein lies both our trials and our triumphs. Let's look first at some of the problems and disadvantages in OSU's decision to turn a circulation system into an online catalog.

Perhaps the biggest disadvantage is that LCS is a full online catalog only for 20% of our titles. (Summary 1) This represents 8 years of full bibliographic records and we currently have storage space for 20 years worth. Additional storage space and full retrospective conversion would, of course, cost money that we don't have at the moment. Another aspect of the database limitation is that full access is not possible for many items in non-Roman alphabets. That is, for Arabic, Hebrew, and Chinese titles, LCS has only the short record (in transliterated form), with no access by subject or added entry. We will maintain card catalogs for these non-Roman records.

This brings up the second disadvantage - the need for double lookups. For full records for pre-1974 material, patrons and staff will need to use the card catalogs, as they will also for many non-Roman titles. Of course, OSU is not alone with this situation, since double lookups are also required in those libraries which have second catalogs for titles processed under AACR2. Multiple lookups also are necessary with COM catalogs and their supplements.

One of the most troublesome aspects of LCS, particularly from a user education viewpoint, is the original design of LCS as a system to be used only by staff. There are three major problem areas associated with the design. First, while we may expect even children to flip through card catalogs, we cannot expect all adult patrons to adapt easily to the operation of a computer terminal. Perhaps some of you have been leery of the automatic banking machines and can empathize with library patrons who must learn to "enter" their requests and respond to system prompts or error messages. This is further complicated by the fact that most terminals were designed for use by personnel who would work with them daily and the operation of this equipment is not self-explanatory. For example, some terminal keys use graphics rather than words to indicate the function of the keys. This situation is made even

worse at OSU by the fact that we have at least five different brands or models of terminals which operate differently. We are trying to reduce the problems patrons may have by taping onto the keys words which indicate their functions and by planning for a single model of terminal in the future.

A second problem with the design of the system is that all transactions in LCS require the use of a command, followed by a search key algorithm or full words, depending on the search. While the reduced amount of input may be helpful to non-typists, the creation of a search key can be troublesome even for frequent users. Many of us use our fingers to count out the appropriate number of letters for title or author-and-title searching, and teach patrons to do the same. And, although the commands are mnemonic, we cannot expect occasional users to remember them.

The third problem is that the original short record was designed as a circulation record, to be seen only by staff. Many codes or abbreviations are used which are not self-explanatory to patrons. Now we have added the full bibliographic record, and perhaps further complicated use by providing patrons with a choice in the information they wish to see.

We have tried to alleviate these problems by posting operating instructions on the terminal (e.g. how to enter, how to backspace) and by having instructional brochures at every public terminal (of which there are about 116). We also have longer patron-oriented LCS manuals near all public terminals.

The development of these printed materials represents an unusually successful example of getting things done by a committee. I should also mention that the materials themselves evolved over the years, with much trial and error. The system was changing and so was our knowledge of what patrons needed or wanted in the way of instructions for an online system.

In addition to these point-of-use printed materials, all freshmen (about 7,000) receive basic LCS instruction in a required general university orientation course and we have developed public one-hour workshops to reach the self-motivated upperclassmen and graduate students. The workshop program was started in January 1980 and we feel it has been successful. This Fall Quarter, we have had more than 350 participants, mostly students.

In addition, we have tried to make the system itself more "user-cordial" by adding instructions within the system in the form of prompts, and we also have improved some of the "uncordial" language used in error messages. These improvements benefit our staff as well as the patrons.

If the system had been instituted all at one time, our problems might not have been so great. We have to instruct both staff and public users to be aware of and adapt to the constant changes. Training and re-training of staff in a library system as large as OSU's requires the in-house development and modification of materials and programs to meet the needs of a staff which is both decentralized and which uses LCS in different ways.

Instruction for the public presents a real challenge in coping with infrequent users, and with a large and constantly shifting population. This year we have special programs under way to prepare our campus community, especially faculty, for the changeover to an online catalog.

Along with the problems we've experienced, many good things have come with the transition to an online catalog. First, LCS was designed to give the circulation status of all of our titles. When a patron uses the online catalog, he or she immediately knows its availability for use. Secondly, LCS permits decentralized or remote access to the entire catalog. Not only do all of the OSU Libraries and the State Library have terminals, but two academic departments on campus bought their own and paid for the hook-up to LCS. Interestingly, both of these terminals belong to departments in the

College of Humanities, which has been the most vocal in its concern about our changeover to an online catalog.

Earlier I mentioned the LCS Telephone Center, which allows anyone to search the database through an operator and have the item held at a library or mailed to a campus address. We also have dial access capability for some companies in the Columbus area and for our regional campus libraries.

One advantage of LCS that should be obvious by now is the capability for change and expansion. We have improved existing searches and added new ones, some of which are possible or economically feasible only with an online system. One of these, the Shelf-Position Search, is a bonus for library patrons in that it provides an extended subject search capability not possible with traditional American catalogs.

Some additions to the database, made for circulation control, have expanded the original catalog. For example, we receive ERIC tapes for searching at the Mechanized Information Center and use the same tapes to add ERIC document records to LCS, giving patrons access by author and title. Of course, the sharing of the system with the State Library has expanded the catalogs of both libraries and greatly facilitates resource sharing.

The transition to an online catalog also has benefited technical service operations and, indirectly, the patron. I mentioned earlier the Shelf-Position Search is used in our OCLC cataloging unit for shelf-listing. In addition, we have added to LCS records for titles on-order or in-process. This is especially helpful to our acquisition staff, but patrons also learn about items that are not yet on the shelves.

There also are some housekeeping advantages to a dual function system. A major advantage is currency. Full catalog access is available within one-two weeks of cataloging. In addition, the records are constantly proofread, as they are seen with each circulation transaction. And, only one record needs to be

corrected, not many cards within one set. With our forthcoming authority control, a correction or change will ramify throughout the system.

Looking at the broader picture, LCS has served as a PR tool for the Libraries and we find that many patrons are attracted by the novelty of an online catalog. And in learning to use the system, they become more aware of the library's organization and resources. Many of them now understand the library's meaning of the word "serial" and they also are discovering the Library of Congress Subject Headings guide, the existence of which had escaped them in their use of the card catalogs.

One final comment: LCS was developed for OSU by IBM programmers who did an excellent job in fulfilling the original design specifications. The system runs on the University's administrative computer, and the libraries benefit from the University's need to have a powerful system with minimal down time. Also, we have an excellent working relationship with the computer center's administration and the LCS programming group. To a large extent, it is this local situation which has permitted the OSU Libraries to move from a limited-purpose circulation system in 1970 to a true online catalog in 1982.

FIGURE 1

LCS LOCATION AND AVAILABILITY DISPLAY

```
COMMAND:          DSL/                          DETAILED SEARCH BY LINE
ENTERED SEARCH:   DSL/1
RESPONSE:

BF431S2   SAGAN, CARL     THE DRAGONS OF EDEN :   1ST ED.   76-45372
     2101740      1977    3   ADDED: 770527   FBR
01     001 3WK   BRW 71036934   0  CHGD  810402/810423
02     002 3WK   WCL
03     003 3WK   UND

PAGE 1 END
```

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FIGURE 2

LCS AUTHOR/TITLE SEARCH

COMMAND: ATS/

SEARCH KEY: SAGA SAGAN, CARL
4
DRAGO DRAGONS OF EDEN
5

ENTERED SEARCH: ATS/SAGADRAGO

RESPONSE:

PAGE 1 3 TITLES (ALL DISPLAYED IN 1 PAGE)

01 SAGAN, CARL THE DRAGONS OF EDEN 1977 FBR

02*SAGAN, CARL THE DRAGONS OF EDEN 1977 FBR

03 SAGARON, GEORGE DRAGONS AND DREAMS 1949

END FOR AVAILABILITY ENTER DSL/ AND LINE NO.

TABLE 1

LCS CHANGEOVER CHRONOLOGY

November 1970	Library Circulation System
	Short Records
	Minimal Searching Capabilities
	Circulation Functions
	Online
	Decentralized (Remote)
	Telephone Center
1974	Shelf-Position Search
1975	Author Search (AUS/Full Name)
	Public Access Terminal

FIGURE 3

LCS LOCATION AND AVAILABILITY DISPLAY

```
DSL/1

HN51J8      SOCIAL FORCES      NOLC      291665   1922       3   SER
01      001       MAI
02      002 NOCIR SOC
03      003 NOCIR UND
04 MAI  001       S           CURRENT ISSUES IN PERIODICAL ROOM
05 SPE  001 NOCIR S 1922-1971 V1-50(MICROFILM)
06 SPE  001 NOCIR   1979-1980 V58(MICROFILM)
07 MAI  001         1978-1979 V57
08 SPE  001 NOCIR   1978-1979 V57(MICROFILM)
09 MAI  001         1977-1978 V56              0 SNAGD 68066379  800808/800808
PAGE 1 MORE ON NEXT PAGE.  ENTER PD2


                                                                  12/24/80
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FIGURE 4

FULL BIBLIOGRAPHIC RECORD

COMMAND: FBL/ FULL BIBLIOGRAPHIC RECORD BY LINE

ENTERED SEARCH: FBL/1

RESPONSE:

BF431S2

SAGAN, CARL

THE DRAGONS OF EDEN : SPECULATIONS ON THE EVOLUTION OF HUMAN INTELLIGENCE / CARL SAGAN. 1ST ED. NEW YORK : RANDOM HOUSE, C1977. 263 P. : ILL. ; 24 CM.

INCLUDES INDEX. BIBLIOGRAPHY: P. (241)-249.

SUB: 1. GENETIC PSYCHOLOGY 2. BRAIN 3. INTELLECT

LC CARD #:76-45372 TITLE #:2101740 OCLC #:2922889 &DQ780926

PAGE 1 END

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TABLE 2

1977	Author Search (AUT/4+5)
	Serial Holdings File
June 1978	Full MARC Storage (FBR)
	Added Entries Searchable
	Subject Search (SIS)
	Full Bibliographic Record Display
	AUT/6+3
March 1979	State Library of Ohio
January 1981	LCS For AACR2 Conflicts

TABLE 3

DECEMBER 1981	HEADINGS AND CROSS REFERENCE DISPLAY AND CONTROL
	SIS TO SUB
	AUT/FULL NAME
	SERIES SEARCH (SER/)
	UNIFORM TITLE SEARCH (UNI/)
JULY 1982	LCS = ONLINE CATALOG
	JANUARY 1974 - PRESENT

CHANGEOVER ADVANTAGES

- Circulation Status
- Decentralized/Remote Access
  - OSU Libraries
  - Academic Departments
  - State Library
  - Telephone Center
  - Dial Access
    - Regional Campus
    - Non-OSU
- Capability for Change/Expansion
  - New Searches
  - Additions to Database (ERIC, HRAF)
  - Shared Database
- Technical Service Use
  - Shelflisting
  - On-Order/In-Process Records
- Local Control

CHANGEOVER PROBLEMS AND DISADVANTAGES

FULL ACCESS: 20% OF OSU TITLES (8 YEARS)
- STORAGE SPACE OF 20 YEARS
- NON-ROMAN EXCLUDED

TWO CATALOGS: DOUBLE LOOKUPS
- PRE-1974 RECORDS
- NON-ROMAN

SYSTEM DESIGN: STAFF-ORIENTED
- OPERATION OF TERMINAL
- SEARCH KEY APPROACH
- INTERPRETATION OF DISPLAY
  - SHORT VERSUS LONG RECORD
  - CODES AND ABBREVIATIONS

STAGES OF CHANGEOVER: CONSTANT CHANGE
- TRAINING AND RETRAINING OF STAFF
- INSTRUCTION FOR PUBLIC USE
  - INFREQUENT USERS
  - SHIFTING POPULATION